

Modern Mapping

By Greg Freeman
Maps and Graphics by Brian Hosek



Interactive map services is easily found by accessing the maps/data resources link in the left column on the Game and Fish Department website.

Coming Soon

The features and modifications to the Game and Fish Department's map service application detailed in this article will be available in late summer 2007.

A high-tech mapping service on the North Dakota Game and Fish Department's website is sure to garner attention from hunters and anglers.

Interactive map services allow users to create maps, browse, query and extract Geographic Information Systems data, and view such things as aerial photographs, Private Land Open To Sportsmen locations, wildlife management areas, watersheds, wetlands, and more.

Interactive map services is located on the Department's website, gf.nd.gov, under the Maps/Data Resources link.

Brian Hosek, Department GIS specialist, said it appeases more than just the hunter or angler. "More and more people are using the Global Positioning System technology," he said. "Outdoor enthusiasts, such as birders, can plot GPS locations on a map."

A highly-sought feature allows users to view PLOTS acreage, private and public lands. "There is a variety of aerial imagery available ranging from 1990-2005," Hosek said. "Users have the ability to zoom in to the area they want to hunt to get a better understanding of the landscape, accessibility and habitat conditions."

For example, say you draw a mule deer buck tag in one of the badlands units of western North Dakota. Using the map

service, you can bring up the hunting unit and display it over a digital topographic map to get a better understanding of the terrain. A recent aerial image may offer further insight. The county roads layer in the transportation directory provides trails and roads throughout the unit. The addition of PLOTS, and other state and federal lands, mark areas open to public access. You also have the ability to measure distances between walking points, which you can plug right into your GPS unit.

"This basically just touches the surface of what you can do with interactive map services," Hosek said. "People are just going to have to go into the site and do some exploring."

Pheasant hunters are likely to have an interest as well. More often than not pheasant hunters rely on the Game and Fish Department's Conservation PLOTS Guide for potential hunting areas. With this service, when you stumble across a hunting place you found to your liking, mark it on the PLOTS Guide, and access the map service to find out more specific information about the area.

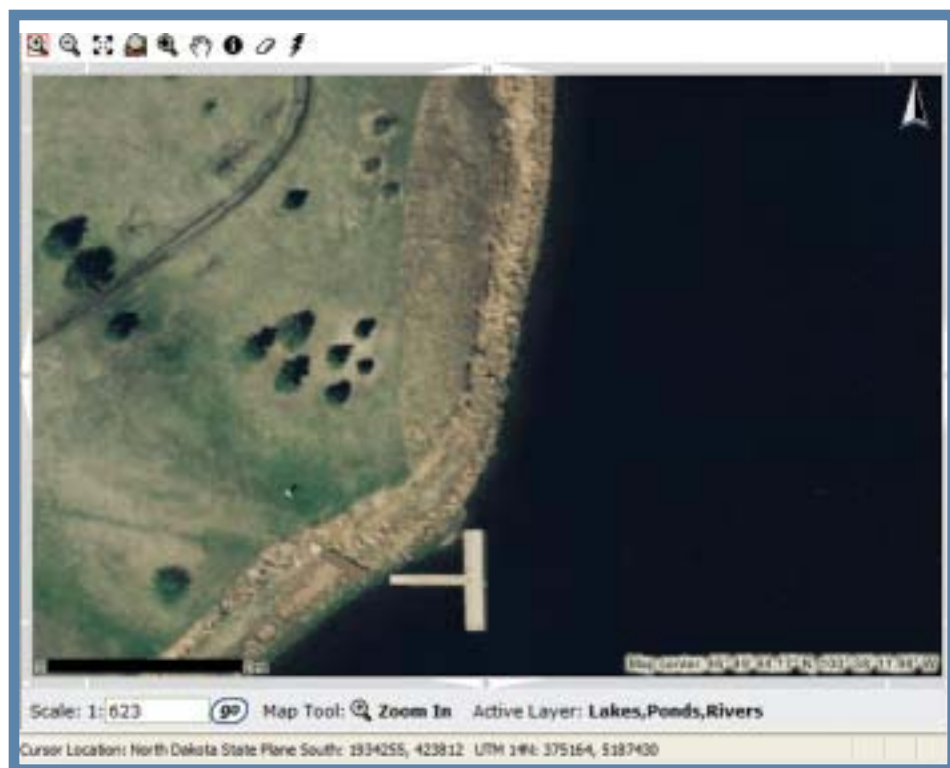
More advanced tools may be used to identify features within a specified distance of a town or city. For example, you may wish to locate all PLOTS within 30 miles of home or where you hunt, and display the information

about these features on the map service. If certain lands are of interest, print a map or load the coordinates to your personal GPS unit.

A number of options can also enhance your fishing trip. Viewing lake contours allows anglers to view the terrain below the water's surface. Anglers can identify humps, low spots and drop offs, and mark these on their GPS units.

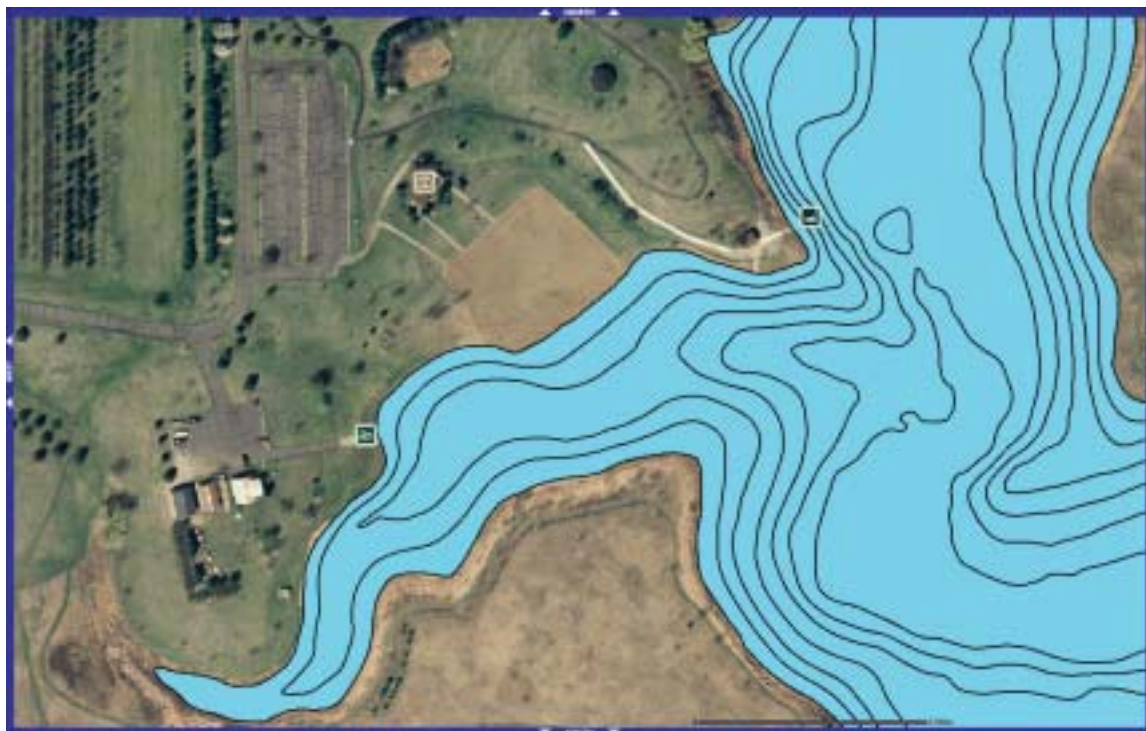
For example, when viewing a lake with the contours showing, navigate the mouse cursor over the area of interest, and then view coordinates at the bottom of the page. These geographic coordinates (latitude and longitude) are in decimal degree format. Anglers can reference these coordinates to mark positions or waypoints on their GPS. You could also use your personal GPS unit to plot positions to the custom map service using the plot XY tool.

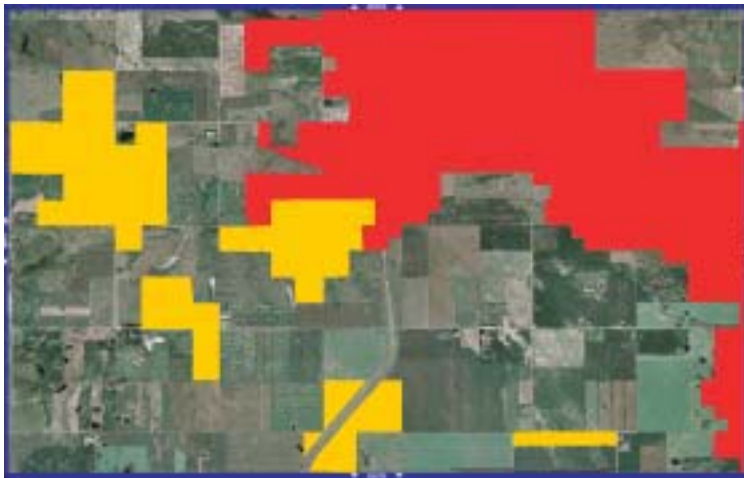
Aerial imagery can be especially beneficial to help identify shoreline landmarks. The fishing facilities layer shows boat ramps, docks, fishing piers and cleaning stations, among other things. Users can also view recent and historic stocking information of North Dakota fishing waters.



Above: There are many features available in interactive map services. For example, you can get an aerial view of an unknown lake, showing where boat docks and other facilities are located.

Below: Computer users can also highlight lake contours, detailing the underwater structure of a favorite fishing spot.





Aerial photographs provide a bird's-eye view of where you recreate.

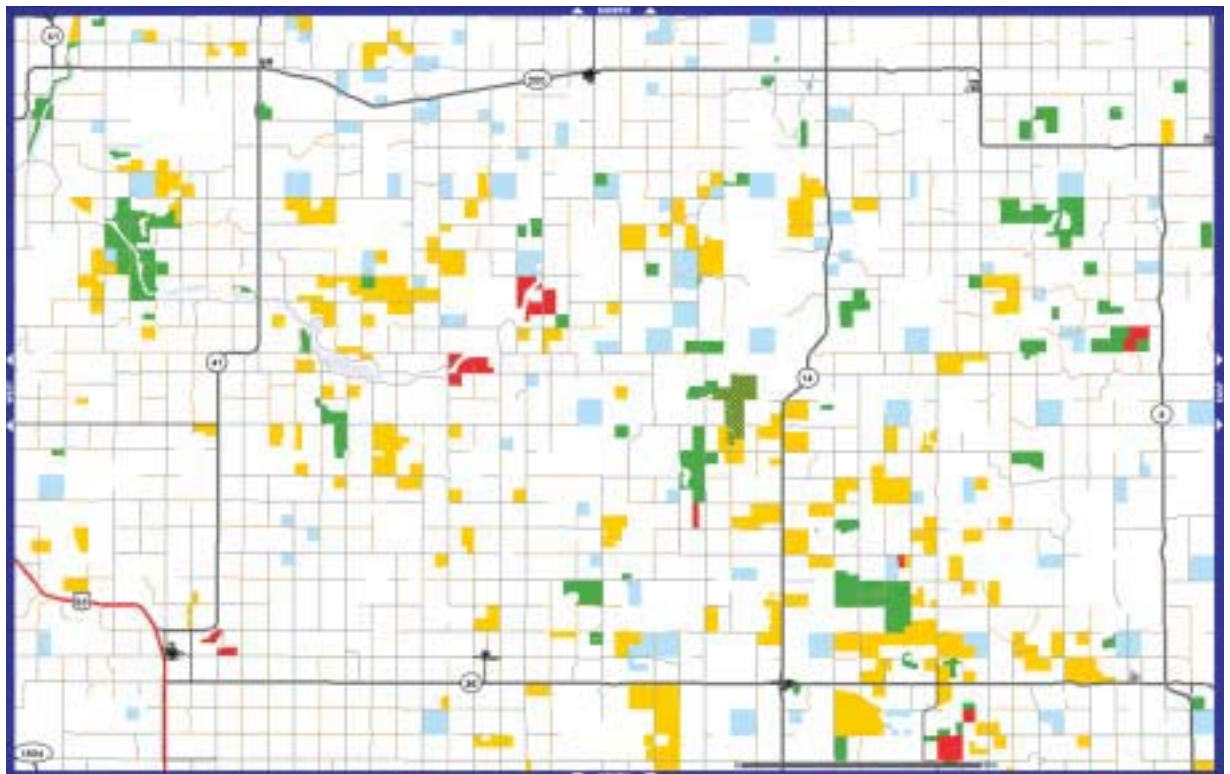


You can use as much or little detail as you wish when creating maps. Hunters are able to design maps that show public lands, including Private Land Open To Sportsmen, open to hunting.

The layout of the maps page has a variety of menu items and tools across the top of the map frame. Options and results for these tools are located right of the map frame. The user has the ability to toggle the view of the right window with the above menu items. At the bottom of the page are the coordinates of the mouse cursor. The bottom of the page contains the selected tool, active layer, and current map scale. This scale can be modified to change the zoom extent of the map.

The pan and zoom tools are used to locate an area of interest. Users can click and drag to move the map about.

The layers menu displays specific data layers, such as fishing waters and deer hunting units, which are organized into folders and visible in the right window. Using the markup item in the advanced menu, users can add a variety of text and graphic markup features to customize their own maps. Users can establish bookmarks that will automatically bring them back to that area, and they can e-mail the project they have created to a hunting or fishing buddy. A final map can be created as a PDF file or a snapshot of the



map contents can be saved in a variety of image formats.

The identify feature allows the user to see detailed information of the active layer. A variety of tools are available to measure length and area. There are many different ways to search and query the information you are looking for.

"It might be a little overwhelming at first, but it really is user friendly," Hosek said. "It is like anything that is relatively new. The more you use it, the more efficient you become."

GREG FREEMAN is the Game and Fish Department's news editor.

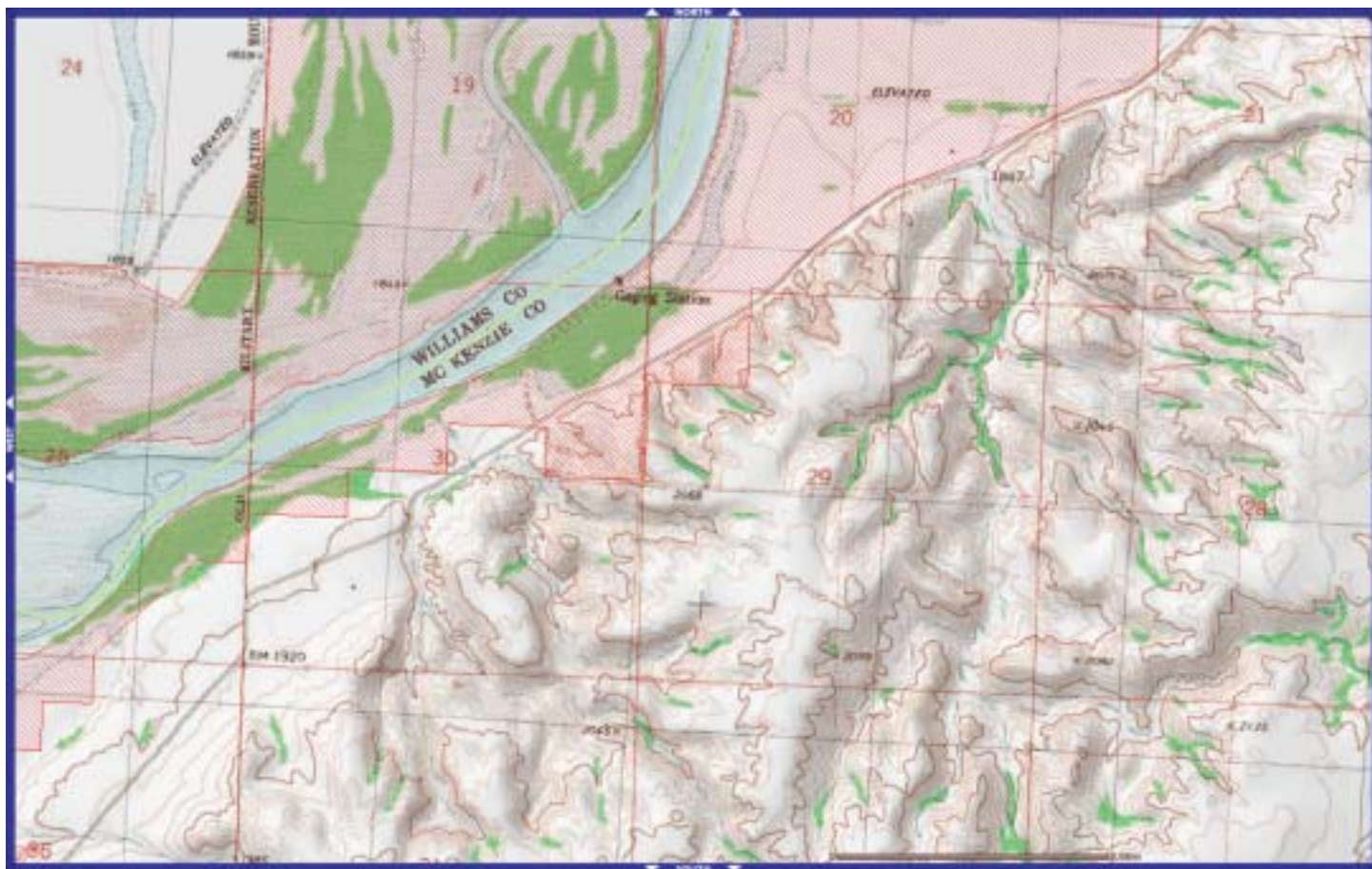
Mixed Menu

The Game and Fish Department website offers a diverse menu including online licensing/applications, regulations, and general hunting, fishing and boating information.

The site also hosts a current news and events section, weekly video news web-cast, and audio and video news releases.

Education and outreach programs, including Boat and Water Safety, Hunter Education and Watchable Wildlife, offer a variety of information and instruction. Conservation projects supply the importance of habitat, and the species that call it home.

The web address is gf.nd.gov.



Big game hunters will find the elevation layer beneficial in understanding the terrain they will be hunting, especially if it's new to them.